

APPENDIX C ECONOMIC DATA FOR LEASED LANDS

CURRENT ECONOMIC INFORMATION FOR LEASED LANDS

1. Summary of Leased Land Acreages and Lease Revenues

In 1996, 81 California and Oregon growers paid \$1.9 million to farm nearly 22,000 acres of leased lands within the Tule Lake and Lower Klamath NWRs. **Table C 1** provides a historical summary of acreage leased and revenues. In 1996, average leased payments were \$86 per acre. Annual lease revenues have ranged from a low of \$1.2 million (in 1980) to a high of \$2.4 million (in 1984). If inflation is considered, lease revenues in the 1990s are considerably less than they were in the early and mid-1980s.

Annual lump-sum payments for Tule Lake and Lower Klamath agricultural leases are made in advance of the growing season. Payments for 1997 leases were due in mid-January 1997.

Grower payments are made to the Reclamation office in Klamath Falls. Upon receipt of payments, Reclamation immediately transfers lease revenues to the U.S. Treasury Department in Washington, DC. Thereafter, lease revenues are treated as general revenues of the federal government.

The federal budget allocations from the Klamath Basin operations of Reclamation or the Service *are not* statutorily linked to agricultural lease revenues from within the wildlife refuges; none of Lower Klamath or Tule Lake agricultural lease revenues are directly used to fund Bureau or Service operations in the Basin. The Agencies are funded under congressional and agency budgetary processes.

Lease bid rates are affected by the productivity of individual parcels, the mix of crops permitted to be grown on the land, and anticipated market prices for crops. Lease revenues tend to be greatest from parcels where row cropping is allowed. Growers will bid more for highly productive lands which are free of detrimental insects, crop diseases and weeds. Market prices for farm commodities fluctuate widely, and also influence grower willingness to pay more or less for leased lands. Favorable market prices prompted the ambitious bidding for leased lands in the early 1980s. Lower commodity prices in the 1990s resulted in less federal revenues being generated by the leased lands. Not all lands available for leasing are bid on by area growers, particularly in times of unfavorable market conditions.

a. Lease Revenues by Management Area

Sump 3 contains the majority of Refuge leased land farmed for row crop production. In 1996, growers paid nearly \$1.1 million to lease 9,598 acres in Sump 3, an average of \$113 an acre. Sump 3 accounted for 44 percent of total leased lands and 58 percent of total agricultural lease revenues from the leased lands. Average payments were \$77 an acre in Sump 2 and \$62 an acre for the Lower Klamath leases (Areas F and J).

b. Acres Leased

In 1996, 21,839 acres were leased for farming. Refuge lands available to agriculture have decreased slightly since the 1980.

c. Cropping Trends Within the Refuge Areas

The majority of leased-land acreage is devoted to grain production. In 1996, 70 percent of active farmland was devoted to grains, 17 percent to row crops, and 12 percent to hay (including alfalfa). About the same amount of land supports grains crops in 1996 as in 1980. Over the 1980-1996 period, row crop acreage has increased, whereas land used for hay production has decreased by 1,500 acres.

TABLE C 1
Summary of Tule Lake and Lower Klamath
Agricultural Leased Land Acreages and Revenues
1980-1996
(In nominal \$/ unadjusted for inflation)

Year	Lease Revenues in \$	Acres Leased	Average Lease Payment in \$ Per Acre
1980	\$1,248,704	22,962	\$54
1981	2,443,844	21,873	112
1982	2,005,441	22,040	91
1983	2,394,932	21,912	109
1984	2,414,613	21,919	110
1985	2,488,155	22,039	113
1986	2,114,371	21,754	97
1987	1,713,853	21,315	80
1989	1,538,880	21,436	72
1989	1,576,778	21,537	73
1990	1,673,123	21,179	79
1991	1,791,951	21,062	85
1992	1,492,735	21,427	70
1993	1,756,115	21,576	81
1994	1,737,093	21,576	81
1995	1,740,085	21,264	82
1996	1,884,026	21,839	86

d. Grains

From 1980 through 1996, the portion of leased land devoted to grain production has fluctuated from 14,000 to about 17,000 acres. Barley is the most widely grown crop on leased lands; an average of 47 percent of these lands have been devoted to barley production (1980-1996). Most Refuge barley growers are raising malting barley, giving them a much higher market value per acre than feed barley. Also relevant is that malting barley is often sold under contract to brewing companies. Crop quality influences the price received by growers; a premium is paid for higher quality crops. Growers receive less than contracted prices for crops damaged by pests or weeds.

TABLE C 2
Acres Planted by Crop Type on the Refuge Leased lands
1980-1996

Year	Barley	Wheat	Oats	Rye	Sugar-beets	Onions	Potatoes	Pea Seed	Alfalfa	Other Hay
	acres	acres	acres	acres	acres	acres	acres	acres	acres	acres
1980	10,435	646	3,697	3	0	0	2,291	0	371	3,529
1981	11,076	720	4,564	0	0	329	2,453	0	431	3,032
1982	11,236	533	4,972	0	0	441	2,603	0	492	2,503
1983	10,520	962	5,311	0	0	435	2,652	0	574	2,365
1984	10,502	750	5,147	0	0	134	2,945	0	660	2,311
1985	9,963	1,044	5,189	0	0	224	3,262	0	803	2,194
1986	9,238	1,431	3,168	0	0	647	2,788	0	704	2,217
1987	8,800	1,329	3,966	0	0	410	3,071	0	491	2,181
1988	10,704	835	3,956	0	0	573	2,436	0	401	2,075
1989	9,027	1,939	5,768	0	0	613	2,727	0	598	1,948
1990	9,941	1,942	4,429	0	0	614	3,037	53	666	1,940
1991	10,096	1,681	4,156	0	265	947	2,224	0	765	2,340
1992	11,491	1,930	2,948	0	456	160	2,226	0	707	1,940
1993	9,456	1,717	3,155	0	607	318	2,919	0	512	2,010
1994	9,798	1,797	2,927	0	699	134	2,893	102	749	1,819
1995	10,623	1,757	3,691	0	658	318	2,909	0	712	1,802
1996	10,277	2,054	3,110	0	818	387	2,625	0	906	1,806

Oats and wheat are the other grains currently being grown on leased lands. Both crops have experienced cycles of increasing and decreasing interest by growers. Rye was grown on Refuge lands in the early 1980s, but has been discontinued due to lack of a strong market.

e. Row Crops

There are important differences in cropping patterns within the two NWRs. Row crops are grown on Tule Lake, but not on Lower Klamath. Potatoes are the main row crop grown within Tule Lake leased lands -- 2,300 to 3,000 acres of potatoes were grown on Tule Lake NWR in the 1980s and 90s. Potatoes historically have provided farmers with the higher dollar value per acre than other crops permitted on the Refuge.

Sugarbeets and onions are the other row crops being produced on the Tule Lake Refuge. Sugarbeets were first introduced in 1991. From 1991 through 1996, Refuge land devoted to sugarbeets has increased from 265 to over 800 acres. Onion production has varied significantly from year to year. In 1996, about 400 acres were in onion production.

f. Hay

Alfalfa is grown on Tule Lake lands, while grass hay is grown on Lower Klamath. Alfalfa acreage gradually has been increasing on the Tule Lake to more than 900 acres in 1996. The amount of Lower Klamath land devoted to grass hay production has decreased from 3,500 acres in 1980 to 1,800 acres in 1996. Some of these former haylands are now devoted exclusively to wildlife habitat while other land has been converted to grain production.

g. Crop Yields and Values

In 1995, Tule Lake and Lower Klamath leases were estimated to reap \$14.5 million in crop value for their leaseholders. This estimate is derived using average yield estimates for the Tule Lake Irrigation District (TID) for the California leased lands, and Klamath County for the Oregon leased lands. (It is possible that yields on leased lands exceeded the overall production norms for this irrigation district and county.) In 1995, grain crops accounted for 36 percent, row crops 58 percent, and hay 6 percent of the production value of Refuge farmland.

Row crops typically yield much higher dollar value per acre than grain or hay. In 1995, production values for lands in row crops averaged \$2,180 per acre; land in grains generated an average production value of \$337 per acre; and lands in hay provided an average value \$297 an acre. For a comparison in value of crops raised on the refuges in 1995, see **Figure C 1**.

Table C 3 provides comparisons of average dollar returns per acre for individual crops grown on the two refuges in 1995. By a significant margin, potatoes generated the highest dollar value per acre (\$2,660/acre). Onions were the second most value-intensive crop (\$1,625/acre). Sugarbeets generated an average of \$878 per acre in gross income. Production values for grains were \$342 per acre for barley, \$453 for wheat, and \$245 for oats. The market value for alfalfa hay (\$570/acre) was considerably higher than the price received for grass hay (\$159/acre).

Importantly, row crop production also involves higher expenditures for leases, labor, equipment and machinery, seed, fertilizer, and pest and weed control. In years with high productivity and favorable prices, row crop leases are likely to achieve greater net profits than leases devoted to grains and hay. However, because of the higher costs of farming inputs, the risk of major financial losses also is much greater for row crop growers. The potential for profit and risk of financial loss are major motivations for intensive pest control by row crop farmers. Information on the net profits of individual farming operations on leased lands is proprietary, and unavailable for this project.

FIGURE C 1

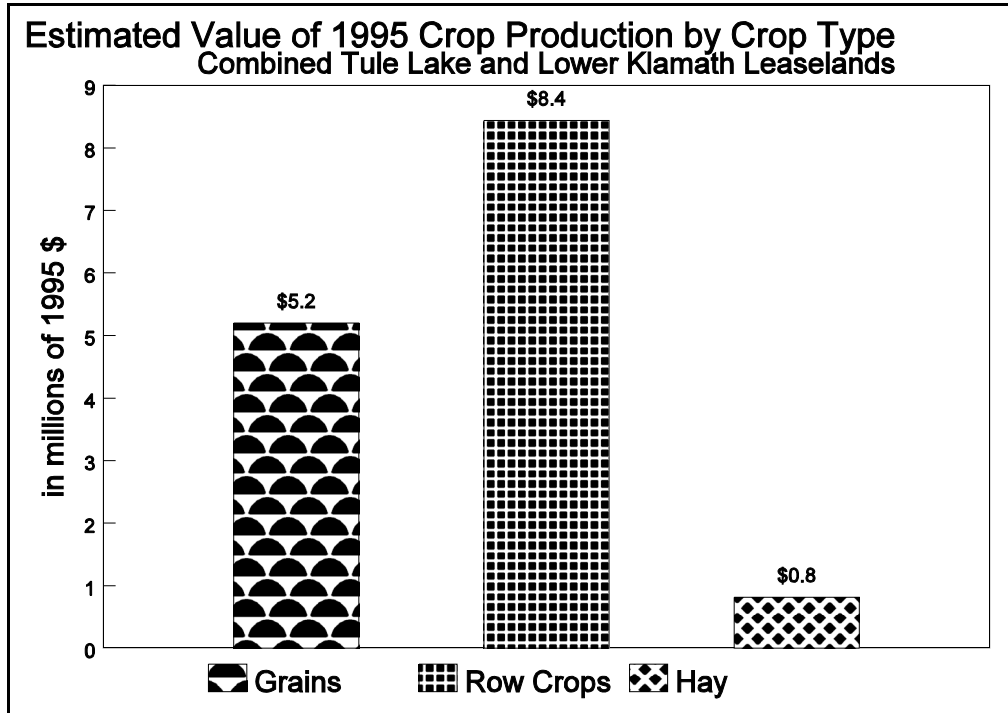
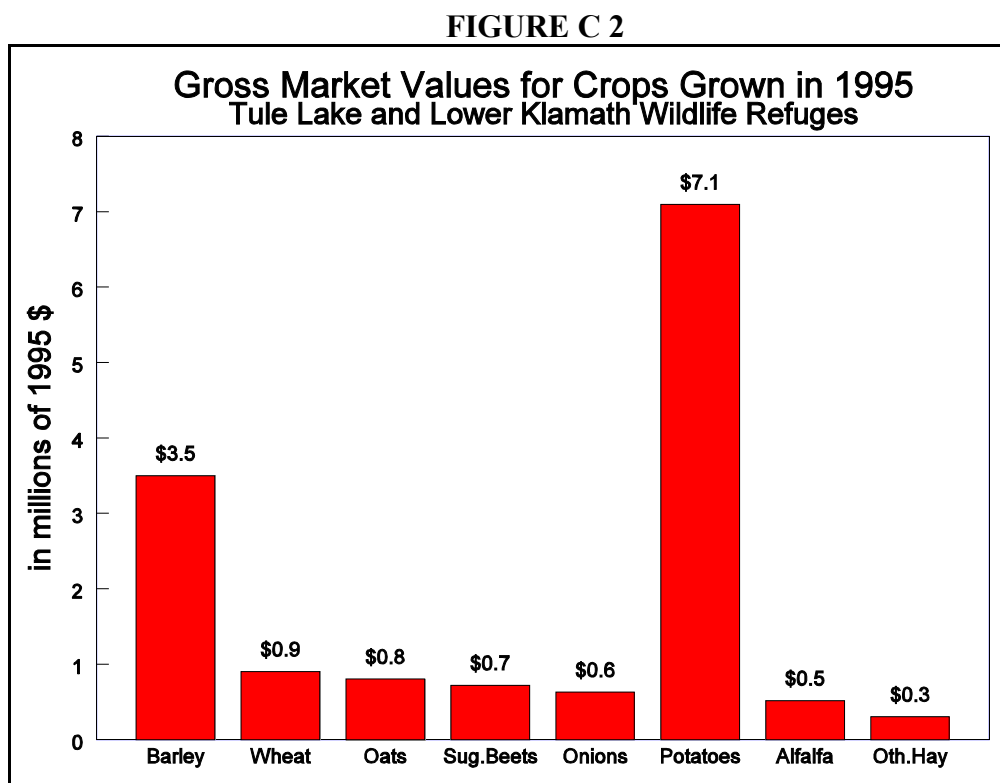


TABLE C 3
Average Dollar Returns Per Acre by Crop Type

Crop Average \$ Value Per Acre	
Barley	\$342
Wheat	453
Oats	245
Sugarbeets	878
Onions	1,625
Potatoes	2,660
Alfalfa	570
Other Hay	159

Figure C 2 displays estimates of the gross market value received for crops grown on the wildlife refuges in 1995. Barley, occupying 48 percent of agricultural leased land, accounted for about 24 percent of gross farm earnings. Potatoes, which occupied about 12 percent of leased lands, provided 49 percent of gross farm earnings.



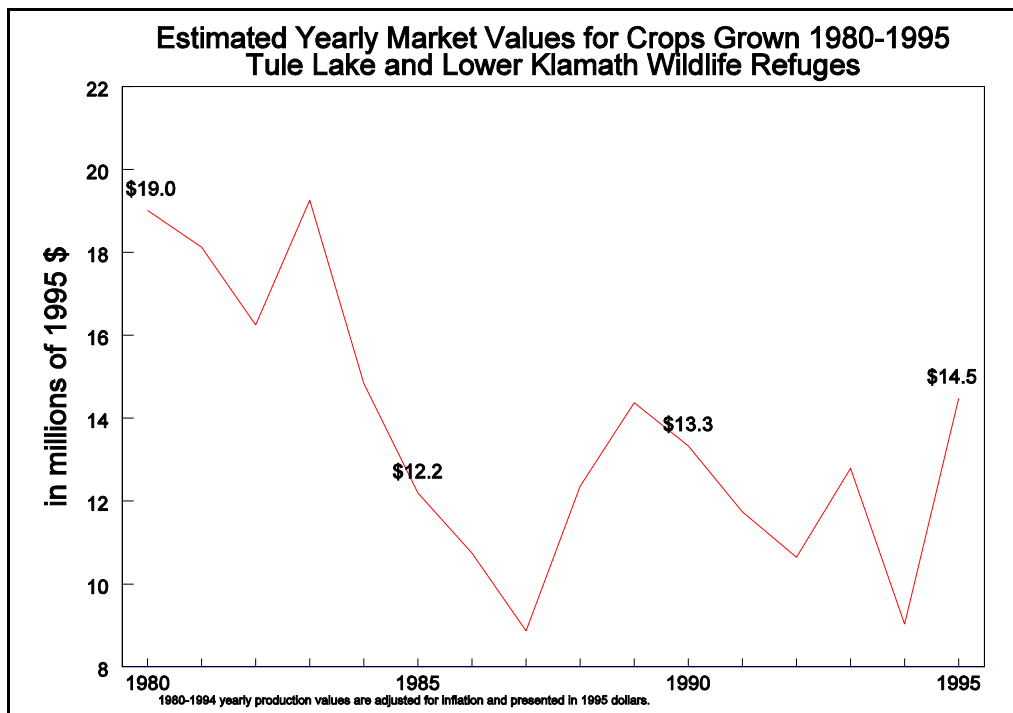
h. Historical Variation in the Value of Agricultural Production

In the 1980s and '90s, yearly aggregate values for crops grown within the two wildlife refuges have ranged from about \$7 million in 1987 to \$14.5 million in 1995. Importantly, the market values for agricultural commodities have not kept pace with inflation. **Figure C 3** displays estimates of the gross market values of the Tule Lake and Lower Klamath crops in dollars adjusted for inflation. Refuge agriculture sales were in the \$15 to \$20 million range in the early 1980s compared to \$10 to \$15 million from the mid-1980s through the mid-1990s. This phenomenon is characteristic of U.S. agriculture.

During the 16-year period, each major crop has undergone cycles of high and low aggregate values. The yearly values of barley production have ranged from \$1.5 million to \$3.6 million in nominal dollars (\$2.1 million to \$5.9 million in "inflation adjusted" 1995 dollars). Potato production values have ranged from \$2.8 million to \$7.1 in nominal dollars (\$3.5 million to

\$10.1 million in "inflation adjusted" 1995 dollars). Gross market value for other crops grown on the refuges have undergone similar volatility.

FIGURE C 3



i. Causes of Variability in Values of Agricultural Production

Crop selection choices/acres planted, crop yields (productivity), and commodity prices are major factors influencing aggregate values of crops grown.

Crop Selection/Acres Planted Since 1980, there has been an increase in the amount of leased land devoted to row crops and a decrease in the amount of land devoted to hay. Because row crops tend to generate higher market values per acre, this transition has contributed to increasing overall grower revenues from the Refuge leased lands.

Land Productivity-- Year-to-year Variation in Crop Yields Crop yields vary significantly from year to year on the leased lands. From 1980 to 1995, average barley production ranged from 96 to 130 bushels an acre, a 36 percent variation in yield. Average annual potato production ranged from 380 hundred weight (cwt)/acre to 450 cwt/acre, an 18 percent variation in yield. The range

of variation in yields for the refuges' other crops was 40 percent for wheat, 50 percent for oats, 35 percent for onions, 30 percent for sugarbeets, 50 percent for alfalfa, and 67 percent for grass hay. Weather and the severity of pest conditions contribute to year-to-year variation in field productivity. The characteristics of a field's natural growing conditions and cultural practices of growers (e.g., seed choices; planting and harvesting scheduling; and proficiency of fertilization, irrigation, and pest management operations) also are major determinants of yield for individual fields. Of note is that grain yields in the Tule Lake portion of the refuge tend to be slightly greater than in the Lower Klamath area. Hay yields are notably greater in the Tule Lake Refuge than on the Lower Klamath Refuge.

TABLE C 4
High, Low and Median Average Crop Yields*
1980-1995
 (most recent year in parenthesis)

Crop	High Yield	Low Yield	Median Year
Barley	130 bu./acre (1993)	94 bu./acre (1988)	115 bu./acre
Wheat	117 bu./acre (1995)	75 bu./acre (1988)	96 bu./acre
Oats	180 bu./acre (1993)	94 bu./acre (1988)	123 bu./acre
Sugarbeets	26 tons/acre (1994)	20 tons/acre (1995)	22 tons/acre
Onions	510 cwt/acre (1987)	378 cwt/acre (1995)	440 cwt/acre
Potatoes	450 cwt/acre (1982)	380 cwt/acre (1990)	400 cwt/acre
Alfalfa	6 tons/acre (1995)	4 tons/acre (1991)	5 tons/acre
Other Hay	5 ton/acre (1993)	3 ton/acre (1983)	4 tons/acre

* The above information is based on yield estimates for the entire Tule Lake Irrigation District; actual production levels for Tule Lake Refuge leases may be slightly higher.

Variability in Commodity Prices Growers are rewarded with higher market prices for superior quality crops and penalized by lower market prices for crops damaged by pests or weather. However, in recent decades it has been the characteristics of national and international markets for agricultural commodities which have most profoundly influenced earnings of Klamath Basin growers. Market prices tend to decrease in years of abundant national and international harvests, and increase in years of poor production. Because of depressed market prices, Klamath Basin growers sometimes receive less total income in years of high-quality yields.

Table C 5 displays the average market prices reported for crops grown in the TID from 1980 through 1995. The numbers in parenthesis are inflation adjusted market values. As in the rest of the country, the market prices for crops grown on Klamath area refuges did not keep pace with inflation in the 1980s and 90s.

TABLE C 5
Average Crop Prices
1980-1990
 (average crop prices in nominal \$)

	Barley	Wheat	Oats	Sugarbeets	Onions	Potatoes	Alfalfa	Other Hay
	\$/bu.	\$/bu.	\$/bu.	\$/ton	\$/cwt	\$/cwt	\$/ton	\$/ton
1980	6.38	7.22	6.25		2.90	6.00	100.00	70.00
1981	6.62	7.50	6.50		3.80	4.96	70.00	45.00
1982	6.62	7.08	5.47		4.00	3.75	80.00	65.00
1983	6.62	7.08	5.47		4.25	6.50	90.00	65.00
1984	5.43	6.45	5.75		3.57	7.00	60.00	50.00
1985	4.35	5.89	2.75		4.15	3.50	85.00	55.00
1986	3.90	4.40	4.25		3.44	3.60	80.00	50.00
1987	4.20	4.50	5.50		3.65	2.21	80.00	50.00
1988	6.00	7.25	8.00		3.65	4.89	85.00	70.00
1989	5.50	6.50	5.05		4.50	5.15	90.00	70.00
1990	4.75	4.75	5.00	\$45.00	5.00	5.21	95.00	75.00
1991	4.90	5.50	4.50	45.00	5.00	4.40	85.00	60.00
1992	4.95	6.00	5.15	45.00	4.75	4.40	85.00	55.00
1993	5.25	5.63	5.50	45.00	5.00	5.20	110.00	90.00
1994	5.00	5.60	4.50	45.00	4.90	2.85	95.00	75.00
1995	7.00	7.50	6.25	45.00	4.30	6.65	95.00	80.00

Barley prices ranged from \$3.90/bushel (1986) to \$7.00/bushel (1995), a 79 percent price variation. When inflation is accounted for the "real dollar" price, barley has varied by more than 150 percent. Price patterns for other grains have fluctuated similarly.

Potato prices have ranged from \$2.21/cwt in 1987 to \$6.65/cwt in 1995. Accounting for inflation, the variation in market value of potatoes in the 1980s and 1990s was almost 300 percent. Prompted by favorable prices in 1995, greater national and international production of potatoes in 1996 contributed to a decrease in market prices. Prices for 1996 potatoes were in the \$5.00/ cwt range. Onion prices also have fluctuated widely. If inflation is considered, the high market price onions was in 1981 and the low in 1995. Sugarbeets are grown under fixed fee contracts and in the 1990s, growers are receiving \$45/ton for beets.

Alfalfa prices have ranged from \$70/ton in 1981 to \$110/ton in 1993. Adjusting for inflation, alfalfa prices were highest in 1980 and lowest in 1992. Grass hay follows the same price cycles as alfalfa hay, although it averages a 20 to 40 percent lower price.

Lease Lands by Management Area

In 1996, sums 2 and 3 (within the Tule Lake Refuge Area) accounted for over two-thirds of leased lands. Note that in 1981, nearly 1,000 acres were removed from the leasing program in the Lower Klamath's Area "F." Agricultural leases discontinued in Area "F" were mainly used for hay production.

Table C 6
Tule Lake and Lower Klamath Lake Agricultural Leases
Acres Leased by Management Area

TULE LAKE AREA					LOWER KLAMATH AREA	
Year	Sump 3	Sump 2	Area J	Oth Leases*	Area K	Area F
1980	9,627	5,139	192	45	5,468	2,492
1981	9,627	5,139	192	6	5,373	1,537
1982	9,627	5,139	192	45	5,501	1,537
1983	9,627	5,139	192	45	5,373	1,537
1984	9,627	5,139	192	45	5,380	1,537
1985	9,627	5,138	192	45	5,501	1,537
1986	9,627	4,853	192	45	5,501	1,537
1987	9,627	4,687	192	45	5,228	1,537
1988	9,576	4,687	192	45	5,400	1,537
1989	9,576	4,687	192	45	5,501	1,537
1990	9,576	4,687	192	45	5,381	1,299
1991	9,576	4,687	192	45	5,256	1,306
1992	9,576	4,691	192	39	5,501	1,429
1993	9,576	4,834	192	45	5,501	1,429
1994	9,576	4,834	192	45	5,501	1,429
1995	9,598	4,639	192	45	5,501	1,290
1996	9,598	4,547	192	45	5,380	1,160
* Included in the “Other Leases” grouping are Management areas “2A” and “N.”						

[illegible]

Table C 8
Crop Acreages in the Lower Klamath Lake NWR
1980-1996

	Barley	Wheat	Oats	Oth. Hay
Year	acres	acres	acres	acres
1980	1,934	0	1,469	3,773
1981	2,656	0	1,386	3,134
1982	2,201	0	2,223	2,570
1983	2,957	0	1,742	2,425
1984	2,153	0	2,439	2,371
1985	3,024	0	1,773	2,231
1986	2,812	225	1,176	2,312
1987	3,191	83	585	2,117
1988	2,830	0	1,508	2,117
1989	2,645	10	2,239	2,075
1990	2,306	0	2,251	1,940
1991	2,593	16	2,070	1,940
1992	3,970	0	1,020	1,940
1993	3,209	0	1,336	1,940
1994	4,160	0	1,027	1,819
1995	3,524	80	1,428	1,802
1996	3,524	40	1,428	1,812

Table C 9
Average Crop Yields Per Acre
Tule Irrigation District
1980-1995

	Barley	Wheat	Oats	Rye	Sugar-beets	Onions	Potato	Pea	Seed Alfalfa	Other Hay
Year	bu./ac	bu./ac	bu./ac	bu./ac	ton/ac	C.W.T/acre	C.W.T/acre	C.W.T/acre	ton/ac	ton/ac
1980	120	100	122	48		450	400	30.0	5	4
1981	115	96	109	48		440	410	30.0	5	4
1982	115	96	109	48		440	450	13.5	4	3
1983	115	96	109	48		440	400	25.0	4	3
1984	120	96	109	48		440	400	30.0	5	4
1985	104	83	125	48		475	400	25.0	5	3
1986	96	83	113	45		500	400	30.0	5	4
1987	98	83	124	45		510	410	30.2	5	4
1988	94	75	94	45		500	380	30.2	5	4
1989	108	95	106	45		460	420	30.2	5	4
1990	104	83	156		23	387	380	20.0	4	4
1991	115	92	156		24	405	390	20.0	4	4
1992	125	100	172		21	405	420	25.0	5	4
1993	130	108	180		21	414	410	20.0	6	5
1994	121	112	141		26	400	420	20.0	6	4
1995	121	117	141		20	378	400	20.0	6	4

Table C 10
Agricultural Lease Revenues by Management Area
1980-1996
(unadjusted for inflation)

Year	Sump 3	Sump 2	Area J	Area K	Area F	Other Leases
1980	767,159	204,271	14,402	222,158	40,254	459
1981	1,791,203	279,385	16,212	336,452	20,325	266
1982	1,272,985	291,120	16,212	362,813	61,696	615
1983	1,617,742	322,065	16,212	368,262	60,049	602
1984	1,618,501	358,074	16,212	361,122	60,102	602
1985	1,626,067	394,863	16,212	390,137	60,324	553
1986	3,251,027	350,519	10,050	341,223	43,299	553
1987	1,086,288	279,588	10,050	303,825	33,548	553
1988	899,312	277,372	10,050	319,296	32,297	553
1989	899,639	280,540	10,050	353,749	32,325	475
1990	944,972	325,169	10,050	365,866	26,591	475
1991	1,028,227	356,748	16,767	361,400	28,334	475
1992	806,590	256,888	16,767	384,693	27,421	375
1993	1,027,189	321,777	16,767	366,275	23,557	550
1994	976,758	333,072	16,767	385,969	23,926	601
1995	978,672	331,319	16,767	393,520	19,206	601
1996	1,081,361	347,956	18,050	392,315	15,881	529

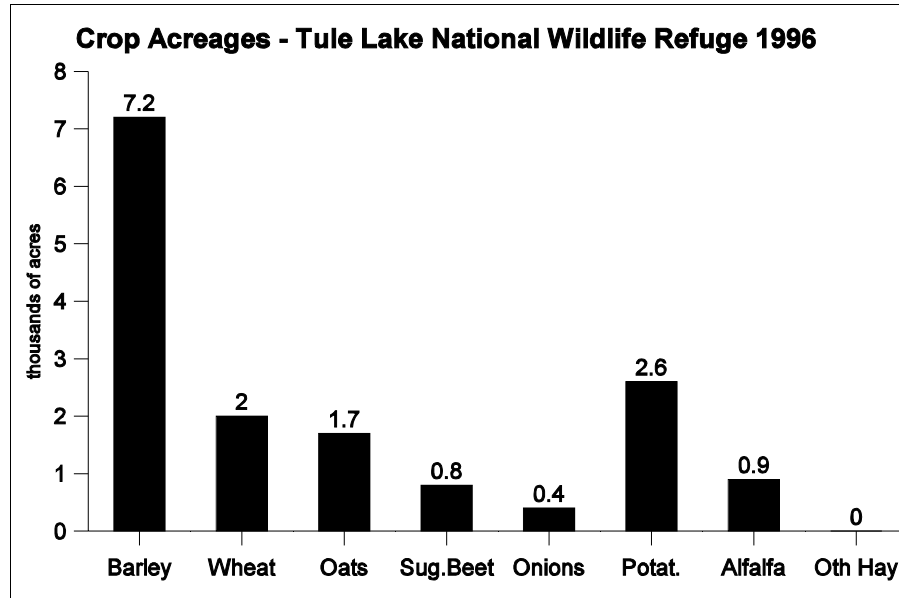
Table C 11
Average Lease Payment per Acre by Management Area
1980-1996

Year	Sump 3	Sump 2	Area J	Area K	Area K	Other Leases
1980	80	40	75	41	16	10
1981	186	54	85	63	13	44
1982	132	57	85	66	40	14
1983	168	65	85	69	39	13
1984	168	70	85	67	39	13
1985	169	77	85	71	39	12
1986	338	72	52	62	28	12
1987	113	60	52	58	22	12
1988	94	59	52	59	21	12
1989	94	60	52	64	21	11
1990	99	69	52	68	20	11
1991	107	76	88	69	22	11
1992	84	55	88	70	19	10
1993	107	67	88	67	16	12
1994	102	69	88	70	17	13
1995	102	71	88	72	15	13
1996	113	77	94	73	14	12

Table C 12
Crops Grown by Acreage and as a Percentage of Total Acreage

ACRES PLANTED							
	GRAINS		ROW CROPS		ALFALFA & OTHER HAY		
Year	acres		acres		acres		
1980	14,816	70.5%	2,291	10.9%	3,900	18.6%	21,007
1981	16,360	72.4%	2,782	12.3%	3,463	15.3%	22,605
1982	16,741	73.5%	3,044	13.4%	2,995	13.1%	22,780
1983	16,793	73.6%	3,087	13.5%	2,939	12.9%	22,819
1984	16,399	73.1%	3,079	13.7%	2,971	13.2%	22,449
1985	16,196	71.4%	3,486	15.4%	2,997	13.2%	22,679
1986	13,837	68.5%	3,435	17.0%	2,921	14.5%	20,193
1987	14,095	69.9%	3,481	17.2%	2,672	13.2%	20,248
1988	15,495	73.9%	3,009	14.3%	2,476	11.8%	20,980
1989	16,734	74.0%	3,340	14.8%	2,546	11.3%	22,620
1990	16,312	72.1%	3,704	16.4%	2,606	11.5%	22,622
1991	15,933	70.9%	3,436	15.3%	3,105	13.8%	22,474
1992	16,369	74.9%	2,842	13.0%	2,647	12.1%	21,858
1993	14,328	69.2%	3,844	18.6%	2,522	12.2%	20,694
1994	14,522	69.4%	3,828	18.3%	2,568	12.3%	20,918
1995	14,213	68.4%	3,871	18.6%	2,708	13.0%	20,792
1996	15,441	70.3%	3,830	17.4%	2,708	12.3%	21,979
1996	15,441	70.2%	3,830	17.4%	2,713	12.3%	21,983
		4.2%		67.2%		-30.6%	4.6%

Figure C 4

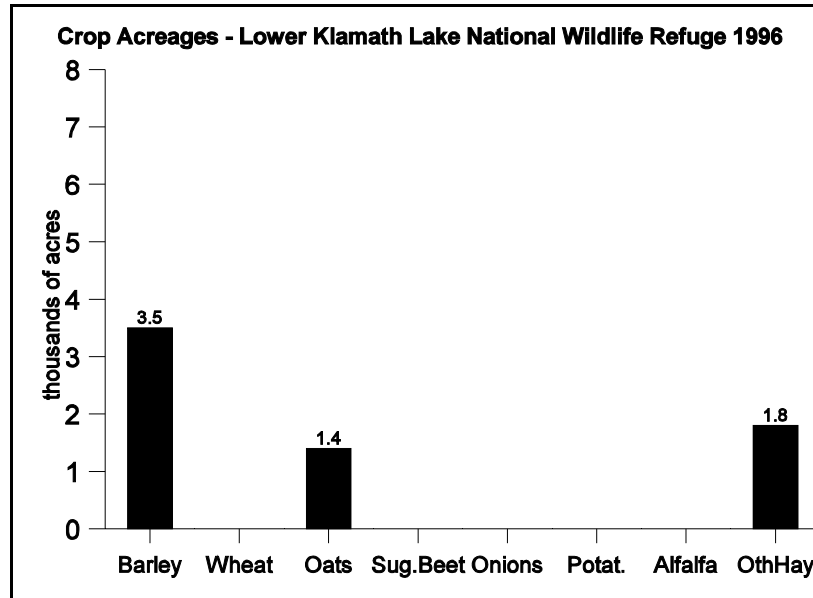


Crop qualities, which may be adversely affected by pest damage, also has influence on prices received by Basin growers.

Cropping Trends on the Tule Lake Refuge

In 1996, 11,700 acres (71) of Tule Lake farmland were devoted to grain production; 3,800 acres (23 percent) were in row crop production and 900 acres (6 percent) were in hay. For purposes of comparison, in 1980 12,500 acres (81 percent) of the refuge's farmlands were in grains, 2,300 acres (15 percent) were in row crops, and 500 acres (3 percent) were in hay.

Figure C 5



Cropping Trends on the Lower Klamath Lake Refuge

In 1996, about 5,000 acres (73 percent) of Lower Klamath Lake agricultural lease lands were devoted to grain production: 3,500 acres were used for growing barley, 1,400 acres were in oats, and 40 acres were in wheat. The remaining 1,800 acres of Lower Klamath lease land was devoted to grass hay production. In 1980, 3,400 acres were in grains and nearly 3,800 acres were in hay production. During the 1980s and 1990s, there has been a net decrease of about 400 acres in the Lower Klamath refuge's agricultural leasing program (these data may be inconsistent w/ other data files). Also of significance has been the conversion of lands formerly in hay production to grain production. In the 1990s, there has been a net increase in lands devoted to grain and at the expense of hay production.